Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-23 (cancelled)

24. (Currently Amended) An RF transponder, according to claim [[23]] 25, characterized by:

an EEPROM storing programmed settings for driving the control logic.

25. (Currently Amended) ~~An RF transponder, according to claim 22, characterized by:~~

An RF transponder comprising an antenna system characterized by:

a programmable load connected to the antenna system for transmission modulation; and.

a power supply and level shifters connected to the programmable load, wherein voltage changes in the power supply dynamically vary a magnitude of the programmable load according to power available in the transponder; and

the programmable load comprises:

a plurality of first output stage transistors connected to a first terminal of the antenna system;

a corresponding plurality of second output stage transistors connected to a second terminal of the antenna system; and

control logic for determining which ones of the first output stage transistors and which ones of the second output stage transistors are used to modulate the antenna system, the control logic connected for modulating the programmable load, wherein the control logic has a control signal input formed in a gate by logically combining a system clock signal and a data stream; and

a sync delay circuit for delaying the system clock signal in order to synchronize the system clock signal with the data stream .

26. (Currently Amended) An RF transponder, according to claim 22 25, characterized by:

a gate for disconnecting modulation of the antenna system in response to a reset

signal.

27. (Cancelled)

28. (Currently Amended) An RF transponder, according to claim [[27]] 31, characterized in that:

the dynamically variable load further comprises elements for programmable variation of the magnitude of the load on the antenna system, the elements comprising:

a plurality of first output stage transistors connected to a first terminal of the antenna system;

a corresponding plurality of second output stage transistors connected to a second terminal of the antenna system; and

control logic for determining which ones of the first output stage transistors and which ones of the second output stage transistors are used to modulate the antenna system.

29. (Original) An RF transponder, according to claim 28, characterized by:

an EEPROM storing programmed settings for driving the control logic.

30. (Cancelled)

31. (Currently Amended) ~~An RF transponder, according to claim 30, characterized by:~~

An RF transponder comprising:

an antenna system characterized by:

a dynamically variable load, comprising:

a load connected to the antenna system for transmission modulation;

a power supply and level shifters connected to the load, wherein voltage changes of the power supply dynamically vary the magnitude of the load according to power available in the transponder;

control logic connected for modulating the dynamically variable load, wherein the control logic has a control signal input formed in a gate by logically combining a system clock signal and a data stream; and

a sync delay circuit for delaying the system clock signal in order to synchronize the system clock signal with the data stream.

32. (Currently Amended) An RF transponder, according to claim [[27]] 31, characterized by:

a gate for interrupting modulation of the antenna system in response to a reset signal.

Claims 33-36 (cancelled)

37. (previously presented) Method for controlling RF signal modulation in a passive transponder which comprises an antenna system. circuitry for applying modulation to an RF signal received by the antenna system, and circuitry for deriving transponder power from the received RF signal, characterized by:

providing a modulation load connected to the antenna system and modulated under the control of a control signal formed by logically combining a system clock signal and a data stream;

delaying the system clock signal in order to synchronize the system clock signal with the data stream;

forming a phase-shift keyed type of control signal, for producing phase-shift keyed modulation of the RF signal received by the antenna system;

the phase-shift keyed control signal uses a system clock signal having half the frequency of the RF signal received by the antenna system; and

the data stream is a signal clocked at a fraction of the frequency of the RF signal received by the antenna system.

38. (Original) Method, according to claim 37, characterized in that:

the fraction is one-thirty-second (1/32)

39. (previously presented) Method for controlling RF signal modulation in a passive transponder which comprises an antenna system, circuitry for applying modulation to an RF signal received by the antenna system, and circuitry for deriving transponder power from the received RF signal, characterized by:

providing a modulation load connected to the antenna system and modulated under the control of a control signal formed by logically combining a system clock signal and a data stream; optimizing RF signal modulation performance by utilizing a modulation index having a magnitude which is adjusted according to programmed trim settings stored in the transponder.

40. (Original) Method, according to claim 39, characterized by:

binary adjustment of the modulation index as determined by bits of the programmed trim settings.

41. (previously presented) Method for controlling RF signal modulation in a passive transponder which comprises an antenna system, circuitry for applying modulation to an RF signal received by the antenna system, and circuitry for deriving transponder power from the received RF signal, characterized by:

providing a modulation load connected to the antenna system and modulated under the control of a control signal formed by logically combining a system clock signal and a data stream;

a modulation index having a magnitude which is adjusted dynamically in proportion to a power of the RF signal received by the antenna system.

42. (previously presented) Method, according to claim 41, characterized by:

preventing RF signal modulation if the power derived from the RF signal received by the antenna system is too low to provide transponder power adequate for stable transponder operation including RF signal modulation.